

DETAILED ACTION

Claim Objections

Claims 28, 30, and 48 are objected to because of the following informalities: Claim 28 recites "laid thembiane" and should read - - laid membrane - -. Claim 30 recites "is claimed in" and should read - - as claimed in - -. Claim 48 recites "as clammed" and should read - - as claimed - -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 8, 17, 19-20, 22, 30, 33, 35, 36, 38-40 47, 48, 50-55, and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 7, 8, 17, 22, 35, 36, 38, 39, 47, 50, and 51, the phrase "may" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "may"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim 19-20 recite the limitation "said tertiary layer". There is insufficient antecedent basis for this limitation in these claims, as claims 15 or 16 do not mention a "tertiary layer".

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In claim 22, line 3 it is unclear what is meant by “any suitable order”. In claim 22, line 5, it is unclear what is meant by “otherwise” or how this word limits the claim.

In claims 30 and 33, it is unclear why “washer style” and “strip style” are in quotation marks. Furthermore it is unclear what is meant by “style” and how it limits the washer or strip.

In claim 40, line 3, it is unclear why part of the claim is in parenthesis and if it is actually part of the claimed invention or not. Similarly, claim 58 (line 2) is unclear.

Claim 48 recites the limitation “said core”. There is insufficient antecedent basis for this limitation in this claim as claim 29 does not mention a “core”.

Claims 52-56 rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

Claim 57 should start with a capital letter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1, 3-9, 11, 13-14, 21-26, 29, 31, 33, 38-46, 48-58, and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Nebesnak et al. (United States Patent 6,764,260 B1).

In regard to claim 1, Nebesnak et al. discloses a surface welded thermoplastic roofing system which teaches a building cladding, said building cladding having a cladding material 24, 30 (Fig. 6) of fusible material (thermoplastic sheets which are fused to each other and the fixing members, and therefore a fusible material, Col. 2, Lines 24-30) which is at least in part attached by fusing to fastenings 10 (Fig. 6), said fastenings at least penetrating said cladding substrate 26 (Fig. 6), wherein by further fusion to itself said cladding material forms a generally continuous cladding membrane 24, 30 (Fig. 6) over said cladding substrate 26 (Fig. 6).

In regard to claim 3, Nebesnak et al. discloses the building cladding as claimed in claim 1, wherein said fastenings have a layer of material fusible (thermoplastic coating, Abstract, Lines 2-3) to said cladding material on that surface which presents to said cladding material (Col. 3, Lines 3-6).

In regard to claim 4, Nebesnak et al. discloses the building cladding as claimed in claim 1, wherein said fusible material is a thermoplastic (Col. 3, Lines 3-6).

In regard to claim 5, Nebesnak et al. discloses the building cladding as claimed in claim 3, wherein said fastenings 10 (Fig. 6) sit on top of said cladding and have said material fusible 24 (Fig. 6) on their underside (Fig. 6).

In regard to claim 6, Nebesnak et al. discloses the building cladding as claimed in claim 3, wherein said fastenings 10 (Fig. 6) sit intermediate said cladding material 30 (Fig. 6) and said cladding substrate and have said material fusible on their top side (Fig. 6).

In regard to claim 7, Nebesnak et al. discloses the building cladding as claimed in claim 3, wherein said fastenings 10 (Fig. 6) may sit within the structure of said cladding material, and have said material fusible on either their top and/or underside (Fig. 6).

In regard to claim 8, Nebesnak et al. discloses the building cladding as claimed in claim 1, wherein said fastenings may join, by fusible welding, adjacent sheets of cladding membrane 24, 30 (Fig. 6, Abstract, Lines 17-19).

In regard to claim 9, Nebesnak et al. discloses the building cladding as claimed in claim 1, wherein said fastenings are of an elongate strip form (Fig. 2).

In regard to claim 11, Nebesnak et al. discloses the building cladding as claimed in claim 1, wherein said fastenings are of a rigid core (metal batten bar, Col. 2, Lines 49-52) with said fusible material coated there on (Col. 2, Lines 49-52).

In regard to claim 13, Nebesnak et al. discloses the building cladding as claimed in claim 1, wherein said fastenings are penetratively fixed to a cladding substrate 22 (Fig. 6).

In regard to claim 14, Nebesnak et al. discloses the building cladding as claimed in claim 1, wherein said fastenings have provision for or can be associated with a penetrative fastener (Fig. 6).

In regard to claim 21, Nebesnak et al. discloses a method of providing an array of fixing members 10 (Fig. 2), attaching into part of the structure of a building envelope and prior to attaching some of said array of fixing members, locating a membrane 24 (Fig. 6) onto said structure, and fusing material of said membrane 24 (Fig. 6) and material of said array of fixing members 10 (Fig. 6) to each other by application of a method causing fusion of said membrane (Abstract, Lines 15-19) to some of said fixing members 10 (Fig. 6).

In regard to claim 22, Nebesnak et al. discloses a method of providing an array of fixing members 10 (Fig. 6), attaching into part of the structure of a building envelope, locating a membrane 24 (Fig. 6), and fusing said membrane and part of at least some of said fixing members (Abstract, Lines 15-19).

In regard to claim 23, Nebesnak et al. discloses the method as claimed in claim 22, wherein said membrane may be fused to itself to form a join or fold to itself or adjacent membranes (abstract, Lines 16-20).

In regard to claim 24, Nebesnak et al. discloses the method as claimed in claim 22, wherein there is an array of adjacent sheets 30 (Fig. 6) of material joined by fusible welding (Abstract, Lines 15-19).

In regard to claim 25, Nebesnak et al. discloses the method as claimed in claim 22, wherein said membrane includes at least in part thermoplastic polyurethane (Col. 2, Lines 51-52).

In regard to claim 26, Nebesnak et al. discloses the method as claimed in claim 22, wherein said membrane is not itself coated, but if required could be rendered resistant to ultraviolet radiation, such as with UV protection additives.

In regard to claim 29, Nebesnak et al. discloses a fixing member 10 (Fig. 6) to provide an array for fastening a cladding membrane 24, 30 (Fig. 6) to a cladding substrate 26 (Fig. 6) which comprises a member of substantially planar form with a layer of thermoplastic polyurethane cladding on that surface to be fusibly associated with said cladding membrane, having at least one penetrative fastening protruding from its under side for penetrative association with a building substrate structure (Fig. 6).

In regard to claim 31, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said fixing member 12 (Fig. 1) is circular in plan form. The heads of the fixing members are circular.

In regard to claim 33, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said fixing members 10 (Fig. 2) are elongate “strip style” planar forms having a multitude of penetrative fastenings arranged along their length.

In regard to claim 38, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said fixing members 10 (Fig. 6) may lie on top of said laid cladding membrane 24 (Fig. 6), penetrating said membrane and fastening down to said building substrate 26 (Fig. 6).

In regard to claim 39, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said fixing member 10 (Fig. 6) may lie underneath said cladding membrane 30 (Fig. 6) before said membrane is laid.

In regard to claim 40, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said fixing member is fastened in place and said

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cladding membrane is laid, the fixing member and membrane are at least in part fusibly welded to each other to at least fasten said membrane down (Abstract, Lines 16-19).

In regard to claim 41, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said fixing member is above said cladding membrane, said fusible welding also seals at least in part underside periphery of said fixing member to said cladding membrane (Abstract, Lines 16-19).

In regard to claims 42-46, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said fixing member has at least in part a lining of fusibly weldable material on its upper and under side when fastening said cladding membrane from either above or below, to fusibly weld to the fusibly weldable material lower layer of the cladding member, wherein the fusibly weldable material on said fixing members is a thermoplastic polyurethane (Col. 2, Lines 53-57).

In regard to claim 48, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said penetrative fastening is fixed to or passes through said core 28 (Fig. 6).

In regard to claim 49, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said fixing member presents a sealed or sealable upper surface (waterproof cover, Abstract, Lines 18-20).

In regard to claim 50, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein a further sealing member 30 (Fig. 6) may be added to or over said fixing member so that when said fixing member is fusibly welded

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to said cladding membrane a weather and element proof upper surface is presented.

In regard to claim 51, Nebesnak et al. discloses a fixing member as claimed in claim 29, wherein said member may be used in corners, on slope and/or for cladding ridgelines, changes in shape and/or curvature to fasten and/or seal abutting or continuous cladding membranes.

In regard to claim 52, as best understood, Nebesnak et al. discloses a structure rendered at least in part waterproof (Nebesnak, Abstract, Lines 17-19) by the use of a method in accordance with the present invention.

In regard to claim 53, as best understood, Nebesnak et al. discloses a plurality of fixing members 22 (Fig. 2) and a membrane 24, 30 (Fig. 6) compatible therewith so as to be complimentary therewith if used in a method in accordance with the present invention.

In regard to claim 54, as best understood, Nebesnak et al. discloses a region of a building envelope (roof deck, abstract, Lines 16-19) weather resistant (waterproof, abstract, Lines 17-19) by use of a membrane of any of the kinds herein exemplified 24,30 (Fig. 6) where such membrane is held in place by localized association with each of an array of fixing members 22 (Fig. 6) wherein said association optionally includes moulding or fusing of a thermoplastic polyurethane (Col. 2, Lines 10-11) with a complimentary material forming at least part of each said fixing members. (Col. 2, Lines 24-26).

In regard to claim 55, as best understood, Nebesnak et al. discloses a fixing member 22 (Fig. 1) suitable for use in a method in accordance with the present invention.

In regard to claim 56, as best understood, Nebesnak et al. discloses the building with a weatherproof membrane applied to the structure of the building (roof deck, Abstract, Lines 16-19), the weatherproof membrane having been applied by a method as claimed in claim 21.

In regard to claim 57, Nebesnak et al. discloses multiple penetrative fasteners 22 (Fig. 1) in part attached through or on a fixing member 10 (Fig. 6) wherein said fasteners are fastened or fastenable to a building structure 28 (Fig. 6) and a membrane to clad said building structure whereby the fixing members, fastened or fastenable to the building structure, as in array can support the membrane by fusing between said fixing members and said membrane to retain said membrane to said building structure to provide a weatherproof membrane for said building structure (Abstract, Lines 16-20).

In regard to claim 58, Nebesnak et al. discloses a cladding assembly comprising or including a substrate 26 (Fig. 6) a plurality of fixing members attaching into said structure 22 (Fig. 1), a membrane supported on said structure by said fixing members 24, 30 (Fig. 6), wherein said fixing members having not been or have been driven penetratively through said membrane and wherein there has been a fusion or other association of at least part of the membrane material with at least part of the fixing member, or at least some of them, as a consequence of energy supplied through the membrane (Abstract, Lines 16-20).

In regard to claim 61, Nebesnak et al. discloses a building wherein the weather resistance has been bestowed by a method as claimed in claim 21.

Claims 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ben-Zvi et al. (United States Patent US 6,635,342 B1).

In regard to claim 15, Ben-Zvi et al. discloses a solar control pigmented thermoplastic polymer sheet which teaches a cladding membrane (Col. 1, Lines 16-18) having at least a first layer with an external major surface of highly ultraviolet stable stabilized, heat or sonic fusible, thermoplastic polyurethane (Col. 2, Lines 53-60) said cladding membrane fusible to itself to form at least an in part continuous weather proof cladding for said building structure.

In regard to claim 16, Ben-Zvi et al. discloses a cladding membrane as claimed in claim 15, wherein said thermoplastic polyurethane has a secondary lamination to its internal major surface of metal material 44 (Fig. 3).

In regard to claim 17, Ben-Zvi et al. discloses a cladding membrane as claimed in claim 16, wherein said cladding membrane may have a further tertiary lamination 42 (Fig. 3) to the underside of said secondary lamination of polycarbonate (Col. 5, Lines 12-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2, 59-60 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nebesnak et al. (United States Patent 6,764,260 B1), as applied to claim 1, in view of Duqueroie et al. (United States Patent Application Publication US 2002/0117519 A1).

In regard to claims 2, 59 and 60, Nebesnak et al. discloses the building cladding as claimed in claim 1, wherein said fusion is by fusible welding (Col. 1, Lines 35-37). While Nebesnak et al. does not specify what kind of weld is used, however Duqueroie et al. teaches the use of both thermal and ultrasonic welds (Duqueroie, Page 4, Claim 11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used either an ultrasonic weld or thermal weld to attach the members as best possible and maximize the strength of the bond.

In regard to claim 62, Nebesnak et al. discloses a membrane for use in a method as claimed in claim 21, however does not disclose an ultrasonic device. Duqueroie teaches of an ultrasonic weld done by an ultrasonic device. It would have been obvious to one having ordinary skill in the art at the time the invention

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was made to have used an ultrasonic device to weld the members as best possible and maximize the strength of the bond, said device and said membrane being suitable for use in a method as claimed in claim 21.

Claims 10 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nebesnak et al. (United States Patent 6,764,260 B1), as applied to claim 1, in view of Wasitis (United States Patent 5,800,891).

In regard to claim 10, Nebesnak et al. discloses the building cladding as claimed in claim 1, however does not disclose that the fastenings are of a discrete or washer like form. Wasitis discloses a roof membrane fastening system which teaches the use of a washer like form 10 (Wasitis, Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included a washer fastening, as taught by Wasitis, to Nebesnak's fastening system to increase the surface area of the fastener and increase the strength of the bond of the cladding system.

In regard to claim 30, Nebesnak et al. discloses the building cladding as claimed in claim 29, however does not disclose that the fastenings are of a discrete or washer like form. Wasitis discloses a roof membrane fastening system which teaches the use of a washer like form 10 (Wasitis, Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included a washer fastening, as taught by Wasitis, to Nebesnak's fastening system to increase the surface area of the fastener and increase the strength of the bond of the cladding system.

Claims 12, 27-28, 32, 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nebesnak et al. (United States Patent 6,764,260 B1), as applied to claim 1.

In regard to claim 12, Nebesnak et al. discloses the building cladding as claimed in claim 1, however does not disclose that the fastenings are a singular material of fusibly weldable nature. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the fastening of a singular material of fusibly weldable nature instead of a metal coated with thermoplastic, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

In regard to claims 27-28, Nebesnak et al. discloses the method as claimed in claim 22, however does not disclose the specific limitation of the array of fixing members being pre-attached prior to over lying thereof with the membrane and subsequent fusing said fixing members to said membrane. It would have been obvious to one having ordinary skill in the art at the time the invention was made to pre-attach the fixing members to the structure prior to over lying thereof with the membrane and subsequent fusing said fixing members to the membrane or fixing members penetrating the already laid membrane and subsequent attaching to said structure because Applicant has not disclosed that either provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with attaching fixing members to the

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membrane because the order in which they are assembled does not impact the effectiveness of the cladding system. Therefore, it would have been an obvious matter of design choice to modify Nebesnak to obtain the invention as specified in the claims.

In regard to claim 32, Nebesnak et al. discloses the fixing member as claimed in claim 29, however does not disclose that the fixing member is of a many sided polygonal shape in plan form. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the fixing member into any shape desired so long as there is no change in utility. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

In regard to claim 47, Nebesnak et al. discloses the fixing member as claimed in claim 29, however does not disclose that the fixing member consists only of thermoplastic polyurethane. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the fixing members completely of thermoplastic polyurethane, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claims 18-20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Zvi et al. (United States Patent US 6,635,342 B1), as applied to claim 16, in view of Brunelle et al. (United States Patent US 6,306,507 B1).

In regard to claim 18, Ben-Zvi et al. discloses the cladding membrane as claimed in claim 16; however Ben-Zvi only discloses two layers, with the first layer containing flakes of metal. Brunelle et al. discloses a thermally stable polymer used as a cladding membrane which teaches the use of a second and third layer, wherein the secondary layer lies between the first layer and said tertiary layer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used a configuration similar to Brunelle with multiple layers instead of a single layer with metal flakes to increase the UV protection via the metal layer.

In regard to claim 19, Ben-Zvi et al. and Brunelle et al. disclose the cladding membrane as claimed in claim 16, wherein said secondary layer is encapsulated by said first and tertiary layers (Brunelle, Col. 21, Lines 42-44).

In regard to claim 20, Ben-Zvi et al. and Brunelle et al. disclose the cladding membrane as claimed in claim 16, wherein there is a fourth layer on the outside major surface of a tertiary layer which consists of an adhesive or adherable material (Brunelle, Col. 20, Lines 32-36).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nebesnak et al. (United States Patent 6,764,260 B1), as applied to claim 22, in view of Ben-Zvi et al. (United States Patent US 6,635,342 B1).

In regard to claim 26, Nebesnak et al. discloses the method as claimed in claim 22, wherein said membrane is not itself coated, however does not disclose a resistance to UV radiation if required. Ben-Zvi et al. discloses a membrane with resistance to UV radiation (Ben-Zvi, Col. 2, Lines 64-67). It would have

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been obvious to one having ordinary skill in the art at the time the invention was made to have used a configuration similar to Ben-Zvi et al.'s membrane to protect the membrane from deterioration by sunlight.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nebesnak et al. (United States Patent 6,764,260 B1), as applied to claim 33, in view of Simmons et al. (United States Patent 4,885,887).

In regard to claim 34, Nebesnak et al. discloses the fixing member of claim 33, however does not disclose a ridge running along the length of said elongate planar form to form a T joint, whether inverted or otherwise, between abutting sheets of cladding membrane. Simmons discloses an apparatus and method for securing an outer roofing membrane to an insulated roof deck which teaches the use of a ridge 18 (Simmons, Fig. 1) to form a T joint. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the T joint from Simmons with Nebesnak's fixing members between abutting sheets of cladding membrane to help anchor the membrane to the substrate and maintain a seal between the two.

Allowable Subject Matter

Claims 35-37 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kartfilt (United States Patent 4,852,323) discloses a nonpenetrating roof membrane fastening system which teaches the use of a membrane and a fixing member. Reinwall et al. (United States Patent 4,726,164) discloses a fastener assembly for a roof membrane which teaches the use of a fixing member and roof membrane.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN PEVARSKI whose telephone number is (571)270-1175. The examiner can normally be reached on Monday-Friday/9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Dunn can be reached on (571)272-6670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/DAVID DUNN/
Supervisory Patent Examiner, Art Unit 3636

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